Communication Re: Advisory Action - clean set of claims
Serial No.: 09/966,511
Confirmation No.: 4740
Filed: 28 September 2001
For: WATER-IN-OIL EMULSIONS WITH ETHYLENE OXIDE GROUPS, COMPOSITIONS AND METHODS

This listing of claims replaces all prior versions, and listings, of claims in the above-identified application:

1. (Previously Presented) A water-in-oil emulsion comprising: a vinyl polymer comprising ethylene oxide-containing side chains and alkyl-Y-containing side chains, wherein Y is O or NR, wherein R is H or CH_3, and wherein the alkyl group of the alkyl-Y-containing side chain has at least 4 carbon atoms on average in a cyclic, branched-, or straight-chain configuration and optionally includes one or more heteroatoms; an oil phase; and a water phase; wherein the vinyl polymer is insoluble or sparingly soluble in the water phase.

2. (Original) The water-in-oil emulsion of claim 1 wherein the vinyl polymer is soluble in the oil phase.

3. (Original) The water-in-oil emulsion of claim 1 wherein the ethylene oxide groups and alkyl-Y groups are in different side chains.

4. (Original) The water-in-oil emulsion of claim 1 which is stable.

5. (Original) The water-in-oil emulsion of claim 1 which is substantive.

6. (Previously Presented) The water-in-oil emulsion of claim 5 which provides a reduction in skin capacitance of greater than about 15% compared to an untreated portion of the skin.

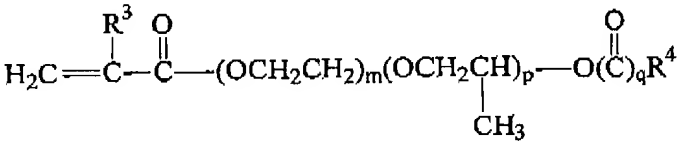
7. (Original) The water-in-oil emulsion of claim 1 wherein the ethylene oxide-containing side chains further include isopropylene oxide groups.

8. (Original) The water-in-oil emulsion of claim 1 wherein the ethylene oxide-containing side chains include at least four ethylene oxide groups.

9. (Original) The water-in-oil emulsion of claim 1 wherein the oil phase comprises one or more oils present in a total amount of at least about 20 wt-%, based on the total weight of the emulsion.

10. (Original) The water-in-oil emulsion of claim 1 wherein the ethylene oxide-containing side chains are derived from one or more monoethylenically unsaturated poly(alkylene oxide) (meth)acrylic monomers.

11. (Original) The water-in-oil emulsion of claim 10 wherein the monoethylenically unsaturated poly(alkylene oxide) (meth)acrylic monomers have the formula:



wherein:

m is at least 2;

p is 0 to 50;

q is 0 or 1;

R^3 is H or CH_3; and

R^4 is hydrogen or linear or branched alkyl and/or aryl groups;

with the proviso that the isopropylene oxide groups (the "p" groups) and the ethylene oxide groups (the "m" groups) are arranged in a reversed, alternating, random, or block configuration.

Communication Re: Advisory Action - clean set of claims
Serial No.: 09/966,511
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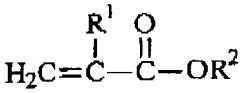
For: WATER-IN-OIL EMULSIONS WITH ETHYLENE OXIDE GROUPS, COMPOSITIONS AND METHODS

12. (Original) The water-in-oil emulsion of claim 1 wherein the alkyl-Y-containing side chains are derived from one or more monoethylenically unsaturated alkyl (meth)acrylic monomers.

13. (Original) The water-in-oil emulsion of claim 12 wherein the monoethylenically unsaturated alkyl (meth)acrylic monomers are selected from the group consisting of (meth)acrylate monomers, (meth)acrylamide monomers, and combinations thereof.

14. (Original) The water-in-oil emulsion of claim 12 wherein the monoethylenically unsaturated alkyl (meth)acrylic monomers are alkyl (meth)acrylate monomers having the formula:



wherein:

R^1 is H or CH_3; and

R^2 is a linear, branched, or cyclic alkyl group optionally including one or more heteroatoms.

15. (Original) The water-in-oil emulsion of claim 1 further comprising a stabilizer.

16. (Original) The water-in-oil emulsion of claim 1 wherein the vinyl polymer is the reaction product of: about 60 wt-% to about 90 wt-% of at least one monoethylenically unsaturated alkyl (meth)acrylic monomer; and about 10 wt-% to about 40 wt-% of at least one monoethylenically unsaturated poly(alkylene oxide) (meth)acrylic monomer.

Communication Re: Advisory Action - clean set of claims
Serial No.: 09/966,511
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For: WATER-IN-OIL EMULSIONS WITH ETHYLENE OXIDE GROUPS, COMPOSITIONS AND METHODS

17. (Original) The water-in-oil emulsion of claim 1 which has compatibility with at least one bioactive agent.

18. (Original) The water-in-oil emulsion of claim 17 wherein the bioactive agent is an antimicrobial.

19. (Original) The water-in-oil emulsion of claim 18 wherein the antimicrobial is chlorhexidine gluconate.

20. (Original) The water-in-oil emulsion of claim 18 wherein the antimicrobial is an iodophor.

21. (Original) The water-in-oil emulsion of claim 20 wherein the iodophor is povidone-iodine.

22. (Original) The water-in-oil emulsion of claim 1 wherein a pressure sensitive adhesive tape applied over the emulsion on skin adheres at a level of at least about 50% of the level of adhesion of the pressure sensitive adhesive tape applied directly to the skin.

23. (Original) The water-in-oil emulsion of claim 1 wherein the vinyl polymer has a calculated HLB of more than about 1 and less than about 10.

24. (Original) The water-in-oil emulsion of claim 1 comprising at least about 0.25 wt-% of the vinyl polymer, based on the total weight of the emulsion.

25. (Original) The water-in-oil emulsion of claim 1 comprising no more than

about 10 wt-% of the vinyl polymer, based on the total weight of the emulsion.

26. (Original) The water-in-oil emulsion of claim 1 further comprising a humectant.

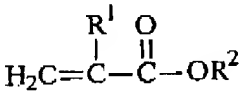
27. (Previously Presented) The water-in-oil emulsion of claim 1 further comprising one or more additives selected from the group consisting of humectants, surfactants, conditioners, sunscreen agents, insect repellents, vitamins, herbal extracts, antiperspirant agents, deodorant agents, skin bleaching agents, skin coloring agents, hair bleaching agents, hair coloring agents, depilating agents, antidandruff agents, antiacne agents, astringents, tensors, skin toning agents, glitter, pigments, dyes, bleaches, perfumes, fragrances, preservatives,antioxidants, waxes, film-forming polymers, propellants, buffers, organic suspending agents, inorganic suspending agents, organic thickening agents, inorganic thickening agents, plasticizers, herbal extracts, flavoring agents, corn removers, callus removers, wart removers, and combinations thereof.

28. (Previously Presented) A water-in-oil emulsion comprising: a vinyl polymer comprising ethylene oxide-containing side chains and alkoxy-containing side chains, wherein the alkyl group of the alkoxy-containing side chain has 4 to 50 carbon atoms on average in a cyclic, branched-, or straight-chain configuration and optionally includes one or more heteroatoms; an oil phase; and a water phase; wherein the vinyl polymer is insoluble or sparingly soluble in the water phase.

29. (Previously Presented) A water-in-oil emulsion comprising: an oil phase; a water phase; and a vinyl polymer that is insoluble or sparingly soluble in the

water phase; wherein the vinyl polymer comprises the reaction product of monomers comprising:

about 60 wt-% to about 90 wt-% of at least one monoethylenically unsaturated alkyl (meth)acrylate monomer having the formula:

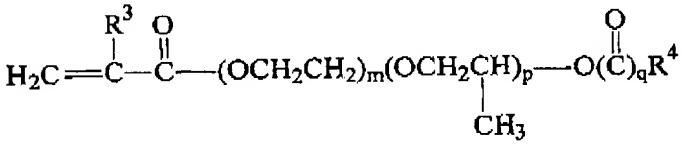


wherein:

R^1 is H or CH_3; and

R^2 is a linear, branched, or cyclic alkyl group optionally including one or more heteroatoms; and

about 10 wt-% to about 40 wt-% of at least one monoethylenically unsaturated poly(alkylene oxide) (meth)acrylic monomer having the formula:



wherein:

m is at least 2;

p is 0 to 50;

q is 0 or 1;

R^3 is H or CH_3; and

R^4 is hydrogen or linear or branched alkyl and/or aryl groups;

with the proviso that the isopropylene oxide groups (the "p" groups) and the ethylene oxide groups (the "m" groups) are arranged in a reversed, alternating, random, or block configuration; with the proviso that the vinyl polymer includes no more than about 0.1 wt-% copolymerized acidic monomers.

30. (Original) The water-in-oil emulsion of claim 29 which is stable.

31. (Original) The water-in-oil emulsion of claim 29 which is substantive.

32. (Previously Presented) A moisturizing composition comprising a water-in-oil emulsion comprising: a vinyl polymer comprising ethylene oxide-containing side chains and alkyl-Y-containing side chains, wherein Y is O or NR, wherein R is H or CH_3, and wherein the alkyl group of the alkyl-Y-containing side chain has at least 4 carbon atoms on average in a cyclic, branched-, or straight-chain configuration and optionally includes one or more heteroatoms; an oil phase; and a water phase; wherein the vinyl polymer is insoluble or sparingly soluble in the water phase.

33. (Original) The moisturizing composition of claim 32 which is stable.

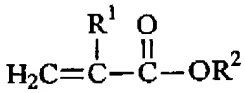
34. (Original) The moisturizing composition of claim 32 which is substantive.

35. (Original) The moisturizing composition of claim 32 wherein a pressure sensitive adhesive tape applied over the emulsion on skin adheres at a level of at least about 50% of the level of adhesion of the pressure sensitive adhesive tape applied directly to the skin.

36. (Previously Presented) A moisturizing composition comprising a water-in-oil emulsion comprising: a vinyl polymer comprising ethylene oxide-containing side chains and alkoxy-containing side chains, wherein the alkyl group of the alkoxy-containing side chain has 4 to 50 carbon atoms on average in a cyclic, branched-, or straight-chain configuration and optionally includes one or more heteroatoms; an oil phase; and a water phase; wherein the vinyl polymer is insoluble or sparingly soluble in the water phase.

37. (Previously Presented) A moisturizing composition comprising a water-in oil emulsion comprising: an oil phase; a water phase; and a vinyl polymer that is insoluble or sparingly soluble in the water phase; wherein the vinyl polymer comprises the reaction product of monomers comprising:

about 60 wt-% to about 90 wt-% of at least one monoethylenically unsaturated alkyl (meth)acrylate monomer having the formula:



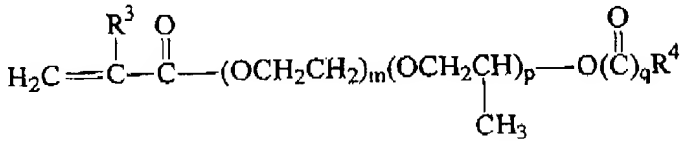
wherein:

R^1 is H or CH_3; and

R^2 is a linear, branched, or cyclic alkyl group optionally including one or more heteroatoms; and

about 10 wt-% to about 40 wt-% of at least one monoethylenically unsaturated poly(alkylene oxide) (meth)acrylic monomer having the formula:

Communication Re: Advisory Action - clean set of claims
Serial No.: 09/966,511
Confirmation No.: 4740
Filed: 28 September 2001
For: WATER-IN-OIL EMULSIONS WITH ETHYLENE OXIDE GROUPS, COMPOSITIONS AND METHODS



wherein:

m is at least 2;

p is 0 to 50;

q is 0 or 1;

R^3 is H or CH_3; and

R^4 is hydrogen or linear or branched alkyl and/or aryl groups;

with the proviso that the isopropylene oxide groups (the "p" groups) and the ethylene oxide groups (the "m" groups) are arranged in a reversed, alternating, random, or block configuration.

38. (Previously Presented) A mammalian tissue antiseptic composition comprising an antimicrobial agent and a water-in-oil emulsion comprising: vinyl polymer comprising ethylene oxide-containing side chains and alkyl-Y-containing side chains, wherein Y is O or NR, wherein R is H or CH_3, and wherein the alkyl group of the alkyl-Y-containing side chain has at least 4 carbon atoms on average in a cyclic, branched-, or straight-chain configuration and optionally includes one or more heteroatoms; an oil phase; and a water phase; wherein the vinyl polymer is insoluble or sparingly soluble in the water phase.

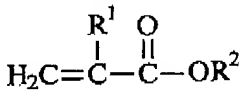
39. (Original) The tissue antiseptic composition of claim 38 which is stable.

40. (Previously Presented) A mammalian tissue antiseptic composition comprising an antimicrobial agent and a water-in-oil emulsion comprising: a

vinyl polymer comprising ethylene oxide-containing side chains and alkoxy-containing side chains, wherein the alkyl group of the alkoxy-containing side chain has 4 to 50 carbon atoms on average in a cyclic, branched-, or straight-chain configuration and optionally includes one or more heteroatoms; an oil phase; and a water phase; wherein the vinyl polymer is insoluble or sparingly soluble in the water phase.

41. (Previously Presented) A mammalian tissue antiseptic composition comprising: an oil phase; a water phase; an antimicrobial agent; and a vinyl polymer that is insoluble or sparingly soluble in the water phase; wherein the vinyl polymer comprises the reaction product of monomers comprising:

about 60 wt-% to about 90 wt-% of at least one monoethylenically unsaturated alkyl (meth)acrylate monomer having the formula:

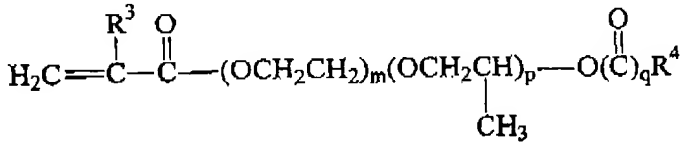


wherein:

R^1 is H or CH_3; and

R^2 is a linear, branched, or cyclic alkyl group optionally including one or more heteroatoms; and

about 10 wt-% to about 40 wt-% of at least one monoethylenically unsaturated poly(alkylene oxide) (meth)acrylic monomer having the formula:



wherein:

m is at least 2;

p is 0 to 50;

q is 0 or 1;

R^3 is H or CH_3; and

R^4 is hydrogen or linear or branched alkyl and/or aryl groups;

with the proviso that the isopropylene oxide groups (the "p" groups) and the ethylene oxide groups (the "m" groups) are arranged in a reversed, alternating, random, or block configuration.

42. (Previously Presented) A personal care composition comprising a water in-oil emulsion comprising: a vinyl polymer comprising ethylene oxide containing side chains and alkyl-Y-containing side chains, wherein Y is O or NR, wherein R is H or CH_3, and wherein the alkyl group of the alkyl-Y-containing side chain has at least 4 carbon atoms on average in a cyclic, branched-, or straight-chain configuration and optionally includes one or more heteroatoms; an oil phase; and a water phase; wherein the vinyl polymer is insoluble or sparingly soluble in the water phase.

43. (Original) The personal care composition of claim 42 which is a hair care composition.

44. (Original) The personal care composition of claim 43 wherein the haircare composition is a styling agent, shampoo, dye, conditioner, rinse, antidandruff preparation,or mask for the hair.

45. (Original) The personal care composition of claim 42 which is in the form of an insect repellant, shaving product, hand lotion, body lotion, gel, cream,

sunless tanningcomposition, sunscreen, cleanser, toner, astringent, freshener, mask for skin, nail polish, nail strengthener, underarm deodorant, antiperspirant, bath powder, talc, bath oil, bubble bath, makeup, cologne, perfume, composition for cushioning sores, or hair removal composition.

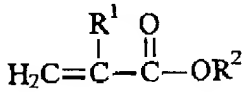
46. (Original) The personal care composition of claim 42 which is a makeup.

47. (Original) The personal care composition of claim 46 wherein the makeup is a lipstick, eye shadow, eye liner, mascara, rouge, face powder, or foundation.

48. (Previously Presented) A personal care composition comprising a water-in-oil emulsion comprising: a vinyl polymer comprising ethylene oxide-containing side chains and alkoxy-containing side chains, wherein the alkyl group of the alkoxy-containing side chain has 4 to 50 carbon atoms on average in a cyclic, branched-, or straight-chain configuration and optionally includes one or more heteroatoms; an oil phase; and a water phase; wherein the vinyl polymer is insoluble or sparingly soluble in the water phase.

49. (Previously Presented) A personal care composition comprising a water in-oil emulsion comprising: an oil phase; a water phase; and a vinyl polymer that is insoluble or sparingly soluble in the water phase; wherein the vinyl polymer comprises the reaction product of monomers comprising:

about 60 wt-% to about 90 wt-% of at least one monoethylenically unsaturated alkyl (meth)acrylate monomer having the formula:



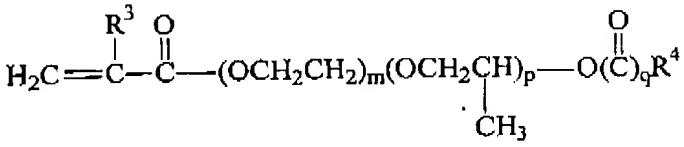
wherein:

Communication Re: Advisory Action - clean set of claims
Serial No.: 09/966,511
Confirmation No.: 4740
Filed: 28 September 2001
For: WATER-IN-OIL EMULSIONS WITH ETHYLENE OXIDE GROUPS, COMPOSITIONS AND METHODS

R^1 is H or CH_3; and

R^2 is a linear, branched, or cyclic alkyl group optionally including one or more heteroatoms; and

about 10 wt-% to about 40 wt-% of at least one monoethylenically unsaturated poly(alkylene oxide) (meth)acrylic monomer having the formula:



wherein:

m is at least 2;

p is 0 to 50;

q is 0 or 1;

R^3 is H or CH_3; and

R^4 is hydrogen or linear or branched alkyl and/or aryl groups;

with the proviso that the isopropylene oxide groups (the "p" groups) and the ethylene oxide groups (the "m" groups) are arranged in a reversed, alternating, random, or block configuration.

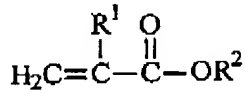
50. (Previously Presented) A transdermal drug delivery composition comprising a pharmaceutical agent and a water-in-oil emulsion comprising: a vinyl polymer comprising ethylene oxide-containing side chains and alkyl Y-containing side chains, wherein Y is O or NR, wherein R is H or CH_3, and wherein the alkyl group of the alkyl-Y-containing side chain has at least 4 carbon atoms on average in a cyclic, branched-, or straight-chain configuration and optionally includes one or more heteroatoms; an oil phase; and a water phase; wherein the vinyl polymer is insoluble or sparingly soluble in the water phase.

Communication Re: Advisory Action - clean set of claims
Serial No.: 09/966,511
Confirmation No.: 4740
Filed: 28 September 2001
For: WATER-IN-OIL EMULSIONS WITH ETHYLENE OXIDE GROUPS, COMPOSITIONS AND METHODS

51. (Previously Presented) A transdermal drug delivery composition comprising a pharmaceutical agent and a water-in-oil emulsion comprising: a vinyl polymer comprising ethylene oxide-containing side chains and alkoxy-containing side chains, wherein the alkyl group of the alkoxy-containing side chain has 4 to 50 carbon atoms on average in a cyclic, branched-, or straight-chain configuration and optionally includes one or more heteroatoms; an oil phase; and a water phase; wherein the vinyl polymer is insoluble or sparingly soluble in the water phase.

52. (Previously Presented) A transdermal drug delivery composition comprising a pharmaceutical agent and a water-in-oil emulsion comprising: an oil phase; a water phase; and a vinyl polymer that is insoluble or sparingly soluble in the water phase; wherein the vinyl polymer comprises the reaction product of monomers comprising:

about 60 wt-% to about 90 wt-% of at least one monoethylenically unsaturated alkyl (meth)acrylate monomer having the formula:



wherein:

R^1 is H or CH_3; and

R^2 is a linear, branched, or cyclic alkyl group optionally including one or more heteroatoms; and

about 10 wt-% to about 40 wt-% of at least one monoethylenically unsaturated poly(alkylene oxide) (meth)acrylic monomer having the formula:

Communication Re: Advisory Action - clean set of claims
Serial No.: 09/966,511
Confirmation No.: 4740
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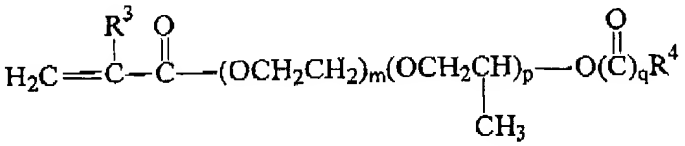

wherein:

m is at least 2;

p is 0 to 50;

q is 0 or 1;

R^3 is H or CH_3; and

R^4 is hydrogen or linear or branched alkyl and/or aryl groups;

with the proviso that the isopropylene oxide groups (the "p" groups) and the ethylene oxide groups (the "m" groups) are arranged in a reversed, alternating, random, or block configuration.

53. (Withdrawn) A method of moisturizing mammalian skin comprising applying a moisturizing composition of claim 32 to mammalian skin.

54. (Withdrawn) A method of moisturizing mammalian skin comprising applying a moisturizing composition of claim 36 to mammalian skin.

55. (Withdrawn) A method of moisturizing mammalian skin comprising applying a moisturizing composition of claim 37 to mammalian skin.

56. (Withdrawn) A method of disinfecting mammalian tissue comprising applying a tissue antiseptic composition of claim 38 to mammalian tissue.

57. (Withdrawn) A method of disinfecting mammalian tissue comprising

applying a tissue antiseptic composition of claim 40 to mammalian tissue.

58. (Withdrawn) A method of disinfecting mammalian tissue comprising applying a tissue antiseptic composition of claim 41 to mammalian tissue.

59. (Withdrawn) A method of delivering a pharmaceutical agent to a mammal comprising applying a transdermal drug delivery composition of claim 50 to mammalian skin.

60. (Withdrawn) A method of delivering a pharmaceutical agent to a mammal comprising applying a transdermal drug delivery composition of claim 51 to mammalian skin.

61. (Withdrawn) A method of delivering a pharmaceutical agent to a mammal comprising applying a transdermal drug delivery composition of claim 52 to mammalian skin.

62. – 65. (Canceled)

66. (Previously Presented) A water-in-oil emulsion comprising:

a vinyl polymer comprising the reaction product of monomers comprising: isooctyl acrylate, stearyl methacrylate, and polyethylene oxide methacrylate;

an oil phase; and

a water phase.

67. (Previously Presented) A moisturing composition comprising a water-in-oil emulsion comprising:

a vinyl polymer comprising the reaction product of monomers comprising: isooctyl acrylate, stearyl methacrylate, and polyethylene oxide methacrylate;

an oil phase; and

a water phase.

68. (Previously Presented) A mammalian tissue antiseptic composition comprising an antimicrobial agent and a water-in-oil emulsion comprising:

a vinyl polymer comprising the reaction product of monomers comprising: isooctyl acrylate, stearyl methacrylate, and polyethylene oxide methacrylate;

an oil phase; and

a water phase.

69. (Previously Presented) A personal care composition comprising a water-in-oil emulsion comprising:

a vinyl polymer comprising the reaction product of monomers comprising: isooctyl acrylate, stearyl methacrylate, and polyethylene oxide methacrylate;

an oil phase; and

a water phase.

70. (Previously Presented) A transdermal drug delivery composition comprising a pharmaceutical agent and a water-in-oil emulsion comprising:

a vinyl polymer comprising the reaction product of monomers comprising: isooctyl acrylate, stearyl methacrylate, and polyethylene oxide methacrylate;

an oil phase; and

a water phase.

71. (Withdrawn) A water-in-oil emulsion comprising:

a vinyl polymer comprising the reaction product of monomers comprising: (i) polyethylene oxide methacrylate and (ii) isooctyl acrylate, 2-ethylhexyl acrylate, or both;

an oil phase; and

a water phase.

72. (Withdrawn) A moisturing composition comprising a water-in-oil emulsion comprising:

a vinyl polymer comprising the reaction product of monomers comprising: (i) polyethylene oxide methacrylate and (ii) isooctyl acrylate, 2-ethylhexyl acrylate, or both;

an oil phase; and

a water phase.

73. (Withdrawn – Previously Presented) A tissue antiseptic composition comprising an antimicrobial agent and a water-in-oil emulsion comprising:

a vinyl polymer comprising the reaction product of monomers comprising: (i) polyethylene oxide methacrylate and (ii) isooctyl acrylate, 2-ethylhexyl acrylate, or both;

an oil phase; and

a water phase.

74. (Withdrawn) A personal care composition comprising a water-in-oil emulsion comprising:

a vinyl polymer comprising the reaction product of monomers

comprising: (i) polyethylene oxide methacrylate and (ii) isooctyl acrylate, 2-ethylhexyl acrylate, or both;

an oil phase; and

a water phase.

75. (Withdrawn – Previously Presented) A transdermal drug delivery composition comprising a pharmaceutical agent and a water-in-oil emulsion comprising:

a vinyl polymer comprising the reaction product of monomers comprising: (i) polyethylene oxide methacrylate and (ii) isooctyl acrylate, 2-ethylhexyl acrylate, or both;

an oil phase; and

a water phase.